WEST Search History

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DATE: Thursday, September 28, 2006

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=OR	
☐	L1	(QPRTASE or QPT or QPTase) and phosphoribosyl and nicotine and transform$ and plant	24

END OF SEARCH HISTORY

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 NEWS  1           Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2           "Ask CAS" for self-help around the clock
 NEWS  3  FEB 27   New STN AnaVist pricing effective March 1, 2006
 NEWS  4  MAY 10   CA/CAplus enhanced with 1900-1906 U.S. patent records
 NEWS  5  MAY 11   KOREAPAT updates resume
 NEWS  6  MAY 19   Derwent World Patents Index to be reloaded and enhanced
 NEWS  7  MAY 30   IPC 8 Rolled-up Core codes added to CA/CAplus and
                   USPATFULL/USPAT2
 NEWS  8  MAY 30   The F-Term thesaurus is now available in CA/CAplus
 NEWS  9  JUN 02   The first reclassification of IPC codes now complete in
                   INPADOC
 NEWS 10  JUN 26   TULSA/TULSA2 reloaded and enhanced with new search and
                   and display fields
 NEWS 11  JUN 28   Price changes in full-text patent databases EPFULL and PCTFULL
 NEWS 12  JUl 11   CHEMSAFE reloaded and enhanced
 NEWS 13  JUl 14   FSTA enhanced with Japanese patents
 NEWS 14  JUl 19   Coverage of Research Disclosure reinstated in DWPI
 NEWS 15  AUG 09   INSPEC enhanced with 1898-1968 archive
 NEWS 16  AUG 28   ADISCTI Reloaded and Enhanced
 NEWS 17  AUG 30   CA(SM)/CAplus(SM) Austrian patent law changes
 NEWS 18  SEP 11   CA/CAplus enhanced with more pre-1907 records
 NEWS 19  SEP 21   CA/CAplus fields enhanced with simultaneous left and right
                   truncation
 NEWS 20  SEP 25   CA(SM)/CAplus(SM) display of CA Lexicon enhanced
 NEWS 21  SEP 25   CAS REGISTRY(SM) no longer includes Concord 3D coordinates
 NEWS 22  SEP 25   CAS REGISTRY(SM) updated with amino acid codes for pyrrolysine
 NEWS 23  SEP 28   CEABA-VTB classification code fields reloaded with new
                   classification scheme

 NEWS EXPRESS  JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation of IPC 8
 NEWS X25      X.25 communication option no longer available

Enter NEWS followed by the item number or name to see news on that
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FILE 'HOME' ENTERED AT 09:23:18 ON 29 SEP 2006

=> file agricola biosis embase caplus
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'AGRICOLA' ENTERED AT 09:23:32 ON 29 SEP 2006

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COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> s mitochondia? and plant and (QPRT? or QPT? or QAPRT?)
L1            0 MITOCHONDIA? AND PLANT AND (QPRT? OR QPT? OR QAPRT?)

=> s mitochondria? and plant and (QPRT? or QPT? or QAPRT?)
L2            3 MITOCHONDRIA? AND PLANT AND (QPRT? OR QPT? OR QAPRT?)

=> dup[licate remove L2
DUP[LICATE IS NOT A RECOGNIZED COMMAND
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"HELP COMMANDS" at an arrow prompt (=>).

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DUPLICATE PREFERENCE IS 'BIOSIS, CAPLUS'
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PROCESSING COMPLETED FOR L2
L3             2 DUPLICATE REMOVE L2 (1 DUPLICATE REMOVED)

=> d l3 1-2 ibib ab

L3   ANSWER 1 OF 2  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
ACCESSION NUMBER:   2006:71847  BIOSIS
DOCUMENT NUMBER:    PREV200600071284
TITLE:              Pan1p, an actin cytoskeleton-associated protein, is
                    required for growth of yeast on oleate medium.
AUTHOR(S):          Kaminska, Joanna; Wysocka-Kapcinska, Monika; Smaczynska-de
                    Rooij, Iwona; Rytka, Joanna; Zoladek, Teresa [Reprint
                    Author]
CORPORATE SOURCE:   Polish Acad Sci, Inst Biochem and Biophys, Dept Genet,
                    Pawinskiego 5A, PL-02106 Warsaw, Poland
                    teresa@ibb.waw.pl
SOURCE:             Experimental Cell Research, (NOV 1 2005) Vol. 310, No. 2,
                    pp. 482-492.
                    CODEN: ECREAL. ISSN: 0014-4827.
DOCUMENT TYPE:      Article
LANGUAGE:           English
ENTRY DATE:         Entered STN: 19 Jan 2006
                    Last Updated on STN: 19 Jan 2006
AB   Pan1p is a yeast actin cytoskeleton-associated protein localized in actin
     patches.  It activates the Arp2/3 complex, which is necessary for actin
     polymerization and endocytosis.  We isolated thepan1-11 yeast mutant
     unable to grow on oleate as a sole carbon source and, therefore,
```

exhibiting the Oleate(-) phenotype. In addition, mutant cells are temperature-sensitive and grow more slowly on glycerol or succinate-containing medium but similarly to the wild type on ethanol, pyruvate or acetate-containing media; this indicates proper functioning of the mitochondrial respiratory chain. However, growth on ethanol medium is compromised when oleic acid is present. Cells show growth arrest in the apical growth phase, and accumulation of cells with abnormally elongated buds is observed. The growth defects of pan1-11 are suppressed by overexpression of the END3 gene encoding a protein that binds Pan1p. The morphology of peroxisomes and induction of peroxisomal enzymes are normal in pan 1-11, indicating that the defect in growth on oleate medium does not result from impairment in peroxisome function. The pan1-11 allele has a deletion of a fragment encoding amino acids 1109-1126 that are part of (QPTQPV)(7) repeats. Surprisingly, the independently isolated pan1-9 mutant, which expresses a truncated form of Pan1p comprising aa 1-859, is able to grow on all media tested. Our results indicate that Pan I p, and possibly other components of the actin cytoskeleton, are necessary to properly regulate growth of dividing cells in response to the presence of some alternative carbon sources in the medium.

L3 ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 1

ACCESSION NUMBER: 2001:102405 BIOSIS
DOCUMENT NUMBER: PREV200100102405
TITLE: Molecular characterization of quinolinate phosphoribosyltransferase (QPRTase) in Nicotiana.
AUTHOR(S): Sinclair, Steven J.; Murphy, Kristina J.; Birch, Carlie D.; Hamill, John D. [Reprint author]
CORPORATE SOURCE: Department of Biological Sciences, Monash University, Clayton Campus, Melbourne, Victoria, 3168, Australia
john.hamill@sci.monash.edu.au
SOURCE: Plant Molecular Biology, (November, 2000) Vol. 44, No. 5, pp. 603-617. print.
CODEN: PMBIDB. ISSN: 0167-4412.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 28 Feb 2001
Last Updated on STN: 15 Feb 2002

AB Quinolate acid phosphoribosyltransferase (QPRTase), a key enzyme in nicotinamide adenine dinucleotide (NAD) biosynthesis, also plays an important role in ensuring nicotinic acid is available for the synthesis of defensive pyridine alkaloids in Nicotiana species. In this study, cDNAs for QPRTase were characterized from N. rustica and N. tabacum. Deduced proteins from both cDNAs are almost identical and contain a 24 amino acid N-terminal extension, not reported in other QPRTases, that has characteristics of a mitochondrial targeting sequence. In N. tabacum and N. sylvestris, both of which contain nicotine as the major pyridine alkaloid, QPRTase transcript was detected in roots, the site of nicotine synthesis, but not in leaves. QPRTase transcript levels increased markedly in roots of both species 12-24 h after damage to aerial tissues, with a concomitant rise in transcript levels of putrescine N-methyltransferase (PMT), another key enzyme in nicotine biosynthesis. In N. glauca, however, in which anabasine represents the major pyridine alkaloid, QPRTase transcript was detected in both leaf and root tissues. Moreover, wound induction of QPRTase but not PMT was observed in leaf tissues, and not in roots, 12-24 h after wounding. Southern analysis of genomic DNA from the Nicotiana species noted above, and also several others from within the genus, suggested that QPRTase is encoded by a small gene family in all the species investigated.

=> s plant and (QPRT? or QPT? or QAPRT?)

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L4          32 PLANT AND (QPRT? OR QPT? OR QAPRT?)

=> s L4 and quinolinate
L5          14 L4 AND QUINOLINATE

=> duplicate remove L5
DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, EMBASE, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L5
L6            7 DUPLICATE REMOVE L5 (7 DUPLICATES REMOVED)

=> d l6 1-7 ibib

L6   ANSWER 1 OF 7  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2006) on STN                                          DUPLICATE 1
ACCESSION NUMBER:        2006:9320  AGRICOLA
DOCUMENT NUMBER:         IND43770860
TITLE:                   Involvement of Quinolinate Phosphoribosyl
                         Transferase in Promotion of Potato Growth by a
                         Burkholderia Strain.
AUTHOR(S):               Wang, Keri; Conn, Kenneth; Lazarovits, George
AVAILABILITY:            DNAL (448.3 Ap5)
SOURCE:                  Applied and environmental microbiology, 2006 Jan. Vol.
                         72, no. 1 p. 760-768
                         ISSN: 0099-2240
NOTE:                    Includes references
DOCUMENT TYPE:           Article
FILE SEGMENT:            Other US
LANGUAGE:                English

L6   ANSWER 2 OF 7  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
ACCESSION NUMBER:   2004:426153  BIOSIS
DOCUMENT NUMBER:    PREV200400426782
TITLE:              The A and B loci of Nicotiana tabacum have non-equivalent
                    effects on the mRNA levels of four alkaloid biosynthetic
                    genes.
AUTHOR(S):          Reed, Deborah G.; Jelesko, John G. [Reprint Author]
CORPORATE SOURCE:   Weed Sci DeptFralin Biotechnol Ctr, Virginia Polytech Inst
                    and State Univ, Blacksburg, VA, 24061, USA
                    jelesko@vt.edu
SOURCE:             Plant Science (Oxford), (November 2004) Vol. 167, No. 5,
                    pp. 1123-1130. print.
                    ISSN: 0168-9452 (ISSN print).
DOCUMENT TYPE:      Article
LANGUAGE:           English
ENTRY DATE:         Entered STN: 3 Nov 2004
                    Last Updated on STN: 3 Nov 2004

L6   ANSWER 3 OF 7  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
     DUPLICATE 2
ACCESSION NUMBER:   2004:376936  BIOSIS
DOCUMENT NUMBER:    PREV200400379869
TITLE:              Analysis of wound-induced gene expression in Nicotiana
                    species with contrasting alkaloid profiles.
AUTHOR(S):          Sinclair, Steven J.; Johnson, Richard; Hamill, John D.
                    [Reprint Author]
CORPORATE SOURCE:   Sch Biol Sci, Monash Univ, POB 18, Melbourne, Vic, 3800,
                    Australia
                    john.hamill@sci.monash.edu.au
SOURCE:             Functional Plant Biology, (2004) Vol. 31, No. 7, pp.
                    721-729. print.
                    ISSN: 1445-4408 (ISSN print).
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DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 22 Sep 2004
Last Updated on STN: 22 Sep 2004

L6 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:14833 CAPLUS
DOCUMENT NUMBER: 142:260014
TITLE: Biotechnology, a tool for reduced-risk tobacco products: The nicotine experience from test tube to cigarette pack
AUTHOR(S): Xie, Jiahua; Song, Wen; Maksymowicz, William; Jin, Wei; Cheah, Kheng; Chen, Wanxi; Carnes, Curtis; Ke, John; Conkling, Mark A.
CORPORATE SOURCE: Vector Tobacco Inc., Durham, NC, USA
SOURCE: Recent Advances in Tobacco Science (2004), 30, 17-37
CODEN: RATSDZ; ISSN: 0363-8480
PUBLISHER: Tobacco Literature Service
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 7 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2006) on STN DUPLICATE 3
ACCESSION NUMBER: 2004:8054 AGRICOLA
DOCUMENT NUMBER: IND43615232
TITLE: Antisense-mediated down-regulation of putrescine N-methyltransferase activity in transgenic Nicotiana tabacum L. can lead to elevated levels of anatabine at the expense of nicotine.
AUTHOR(S): Chintapakorn, Y.; Hamill, J.D.
SOURCE: Plant molecular biology, 2003 Sept. Vol. 53, no. pp. 1-2 p. 87-105
ISSN: 0167-4412
NOTE: Includes references
DOCUMENT TYPE: Article
FILE SEGMENT: Non US
LANGUAGE: English

L6 ANSWER 6 OF 7 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN DUPLICATE 4
ACCESSION NUMBER: 2001:102405 BIOSIS
DOCUMENT NUMBER: PREV200100102405
TITLE: Molecular characterization of quinolinate phosphoribosyltransferase (QPRTase) in Nicotiana.
AUTHOR(S): Sinclair, Steven J.; Murphy, Kristina J.; Birch, Carlie D.; Hamill, John D. [Reprint author]
CORPORATE SOURCE: Department of Biological Sciences, Monash University, Clayton Campus, Melbourne, Victoria, 3168, Australia john.hamill@sci.monash.edu.au
SOURCE: Plant Molecular Biology, (November, 2000) Vol. 44, No. 5, pp. 603-617. print.
CODEN: PMBIDB. ISSN: 0167-4412.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 28 Feb 2001
Last Updated on STN: 15 Feb 2002

L6 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:512669 CAPLUS
DOCUMENT NUMBER: 127:133362

TITLE:	Regulation of quinolinic acid phosphoribosyltransferase in root cultures of Nicotiana alata Link and Otto (QAPRtase, pyridine, putrescine methyl transferase, jasmonic acid, trigonelline)
AUTHOR(S):	Burkhouse, Paul Christopher
CORPORATE SOURCE:	Univ. of Minnesota, Minneapolis, MN, USA
SOURCE:	(1997) 98 pp. Avail.: UMI, Order No. DA9721614 From: Diss. Abstr. Int., B 1997, 58(2), 574
DOCUMENT TYPE:	Dissertation
LANGUAGE:	English

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=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	58.23	58.44

FILE 'STNGUIDE' ENTERED AT 09:35:24 ON 29 SEP 2006

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Sep 22, 2006 (20060922/UP).

WEST Search History

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DATE: Thursday, September 28, 2006

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	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR		
☐	L1	s-l-w-y	1
☐	L2	serine-leucine-tryptophan-tyrosine	0
☐	L3	ser-leu-try-tyr	0
☐	L4	serleutrytyr	0
☐	L5	slwy	3
☐	L6	serineleucinetryptophantyrosine	0
☐	L7	$slwy$	105
☐	L8	L7 and pathogen	31
☐	L9	L7 and bacteria	63
☐	L10	ppyd	1
☐	L11	prolineprolinetyrosineaspar$	0
☐	L12	proline-proline-tyrosine-aspar$	0
☐	L13	p-p-y-d	1
☐	L14	$p-p-y-d$	1
☐	L15	$ppyd$	101

END OF SEARCH HISTORY

proteosome (prō′tē-ō-sōm)

A cluster of genes that encode components of the cell cytosolic proteolytic complex, a set of proteins thought to be involved in cellular processing and transport of peptides in the formation of the major histocompatibility complex class I molecules.

[proteo- + G. *sōma*, body]

Prev

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,565,848 B1
DATED : May 20, 2003
INVENTOR(S) : Peter S. Lu et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

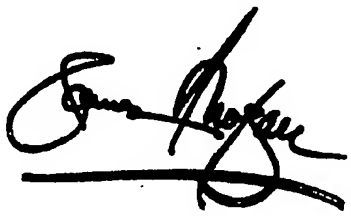
Column 1,
Line 3, insert paragraph:
-- This invention was made with Government support under contact 5 P01 AI36535-04 awarded by the National Institutes of Health. The Government has certain rights in this invention. --

Column 20,
Line 33, "342:435438" should read -- 342:435-438 --

Column 25,
Line 10, "9(2):385412" should read -- 9(2):385-412 --

Signed and Sealed this

Sixth Day of January, 2004



JAMES E. ROGAN
Director of the United States Patent and Trademark Office

Previous Doc Next Doc Go to Doc#
First Hit Fwd Refs

Generate Collection

L15: Entry 78 of 101 File: USPT Jan 28, 1997

DOCUMENT-IDENTIFIER: US 5597725 A
** See image for Certificate of Correction **
TITLE: Cadherin-specific antibodies and hybridoma cell lines

Detailed Description Text (10):
TAPPYD (SEQ ID NO: 1)

Previous Doc Next Doc Go to Doc#

L15: Entry 65 of 101 File: USPT May 20, 2003

DOCUMENT-IDENTIFIER: US 6565848 B1
** See image for Certificate of Correction **
TITLE: Cadherin-like asymmetry protein-1, and methods for its use

Detailed Description Text (143):
Degenerate oligonucleotide primers were designed on the basis of a highly conserved cytoplasmic domain of classical cadherins corresponding to sequences TAPPYD and FKKLAD. The 5' sense primer had the sequence of GGMTTCCACNGCNCCNCCNTA(CT)GA(SEQ ID NO:5) and the 3' anti-sense primer had the sequence of GCTCTAGATCNGCNA(AG)(CT)TT (CT)TT(AG)M(SEQ ID NO:6).

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/02405

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G01N 33/53, 33/536, 3/543
US CL :435/7.1, 6; 436/536, 518, 501, 543
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/7.1, 6; 436/536, 518, 501, 543

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, CAS, MP

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	LUO, P. et al. Antigenic and immunological mimicry of peptide mimotopes of Lewis carbohydrate antigens. Molecular Immunology. 1998, Vol. 35, pages 865-879, especially pages 866-877.	1-13, 18-19, 21-23
Y,P	US 5,817,748 A (MILLER et al) 06 October 1998, col. 7, line 21 to col. 8, line 25; col. 10, line 54 up to col. 14, line 4.	1-13, 18-19, 21-23
Y	US 4,963,263 A (KAUVAR) 16 October 1990, col. 9, Example 1 up to col. 10, line 28.	1-13, 21-23

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 05 MAY 1999	Date of mailing of the international search report 13 MAY 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer T. WESSENFORF JOYCE BRIDGERS PARALEGAL SPECIALIST CHEMICAL MATRIX Telephone No. (703) 308-0196

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/02405

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	YOUNG, A.C.M. et al. The three-dimensional structures of a polysaccharide binding antibody to Cryptococcus neoformans and its complex with a peptide from a phage display library: Implications for the identification of peptide mimotopes. J. Mol. Biol. 1997, Vol. 274, pages 622-634, especially pages 629-631.	1-4, 6-10, 12, 13, 18-19, 23 ----- 5, 11, 21-22
X -- Y	VALADON, P. et al. Peptide libraries define the fine specificity of anti-polysaccharide antibodies to cryptococcus neoformans. J. Mol. Biol. 1996, Vol. 261, pages 11-22, especially page 15, col. 2 up to page 19, col. 2.	1-4, 6-10, 12-13, 18-19, 23 ----- 5, 11, 21-22
X -- Y	WESTERINK, M.A.J. et al. Peptide mimicry of the meningococcal group C capsular polysaccharide. Proc. Natl. Acad. Sci., USA. April 1995, Vol. 92, pages 4021-4025, especially pages 4024-4025.	23 ----- 1-13, 18-19
X	KIEBER-EMMONS, T. et al. Peptide mimicry of adenocarcinoma-associated carbohydrate antigens. Hybridoma. 1977, Vol. 16, No. 1, pages 3-10, especially pages 8-9.	23 ----- 1-13, 18-19, 21-22
X -- Y	OLDENBURG, K.R. et al. Peptide ligands for a sugar-binding protein isolated from a random peptide library. Proc. Natl. Acad. Sci., USA. June 1992, Vol. 89, pages 5393-5397, especially pages 5394-5397.	23 ----- 1-13, 18-19, 21-22

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/02405

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-13, 18--19, 21-23

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/02405

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING
This ISA found multiple inventions as follows:

Group I, claim(s) 1-13, 18-19 and 21-23, drawn to method of preparing peptide which mimics an antigenic carbohydrate.

Group II, claim(s) 14-17, drawn to method of raising immune response.

Group III, claim(s) 20, drawn to method of identifying peptide sequences against two or more different pathogens.

The inventions listed as Groups I and II do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the method steps of Group I, i.e., of preparing a peptide do not correspond to the method of generating immune responses containing additional set of components as the DNA vaccine recited in Group II.

The inventions listed as Groups I and III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: as the method steps of preparing a peptide do not correspond to the method of identifying a peptide that induces immune response against two or more pathogens by administering a peptide or a peptide composition.

The inventions listed as Groups II and III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the method steps of Group II of generating immune response against the antigenic carbohydrate using additional components of DNA vaccine do not correspond to the method steps of Group III of identifying a peptide sequence that induces immune response against two or more different pathogens.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack Unity of Invention because they are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for more than one species to be searched, the appropriate additional search fees must be paid. The species are as follows:

Peptide Seq. ID. NOS. 1-60.
Each of these species are structurally dissimilar since these peptides have been obtained from different antigens as pathogens or tumors. Therefore, each of these peptides would have different mode of actions. Applicants are required to groups the claims that would have read on a particular species. E.g., Seq. ID. is a longer peptide sequence of peptide fragment Seq. ID, 4, 6, 8. (Note that the fees would be recalculated upon applicants' groupings of the species. [The different species can be grouped as follows: Seq. ID NOS. (1, 4, 6, 8 (Specie I); Seq. ID. NOS. 2, 14, 15 (Specie II); Seq. ID. 5 (Specie III); Seq. ID NOS. 9-10, 13 (Specie IV); Seq. ID. 11 (Species V) and from Seq. ID. NOS> 16-60 (Species VI-L)].
The claims are deemed to correspond to the species listed above in the following manner: claim 21.
The following claims are generic: NONE

Example 2

[0101] The Induction of Anti-carbohydrate Immune Responses by Peptides.

[0102] The above mentioned possible structural similarities suggest that anti-sera raised to the peptide putative motifs might cross-react with a variety of subunits representative of Lewis antigens. The immunological presentation of the putative motifs, (i.e. short or longer peptides, presentation in a helix or beta bend, monovalent or multivalent (clustered forms)) might mimic overlapping epitopes on otherwise different carbohydrate structures. To test this idea, Balb/c mice were immunized with peptide-proteosome conjugates representative of the motifs YYPYD (SEQ ID NO: 6), and YYRYD (SEQ ID NO: 7) or the same peptides as MAP forms that are multiple repeats of the motifs administered with QS-21. Sera were collected 1 week after the last immunization, pooled and tested for reactivity with LeY and Leb. For the proteosome conjugates we found that sera developed from the immunizations react with the two multivalent probes, with the IgG reactivity titering up to 1:2000 (FIG. 4a). Superposition of LeY and Leb structures indicate that despite the change of glycosidic linkage from .beta.1-3 to .beta.1-4 in the type 1 and 2 chains, resulting conformational features of the respective sugar moieties are still shared forming a common topography. The only effective difference is the position of the N-acetyl and hydroxymethyl groups projected on opposite sides of the type 1 and 2 difucosylated structures. The ELISA results in FIG. 3a suggest that the sera is reacting with the common topography of LeY and Leb.

[0099] Other peptides include a triple repeat of the APWLY (SEQ ID NO: 10) motif reactive with another anti-LeY antibody B3 [Hoess, 1993]--e.g. GGGAPWLYGAPWLYGAPWLY (K61223) and a derivatized form were not reactive with these antibodies.

[0100] BR55-2 bound very well to K61106 and K61107 relative to the other peptides. Unlike 15.6A, the monoclonal ME361 also reacted with these peptide forms, displaying O.D.s for K61105 and K61110 similar to that observed for the synthetic LeY antigen. The reduction in reactivity of 15.6A for peptides otherwise reactive with BR55-2 suggests that the peptides mimic a structural feature(s) unique to BR55-2 recognition. BR55-2 and 15.6A show distinct binding properties for LeY expressing tumor cells. In addition, BR55-2 displays little reactivity with the K61223 and K61108 peptides which represents the APWLY (SEQ ID NO: 10) motif reactive with the anti-LeY antibody B3 . The affect of sequence on reactivity is observed with lack of reactivity of BR55-2 with K61109 in which the WRY tract was synthesized in a different molecular environment. This data further suggests that K61106 and K61107 mimic salient features of the surface conformation of LeY which is compatible with the BR55-2 combining site since BR55-2 selectively cross-reacts with these peptides. Inhibition of LeY-PAA binding of BR55-2 by these MAP peptides is shown in FIG. 2b. K61106 and K1107 displayed 50% inhibition of BR55-2 binding to LeY with 20 times molar excess. These data indicate that the YRY and WRY motifs synthesized as a triplet, lend to reactivity of these motifs with BR55-2. Substitution of YPY (K61105) reduces the recognition ability of BR55-2. The general mimicry of the K1106, K1105 and K1107 peptides for Le antigens is further assessed by ELISA reactivity with the anti-SA-LeX monoclonal antibody FH-6 (FIG. 3). These peptides are also reactive with this antibody. The significance of this reactivity is that previous reports indicate that peptides might only be reactive with antibodies that isolate them and in fact it is expected that peptide mimotopes might be not true mimics of carbohydrates. Contrary to this suggestion, it appears that the K1106, K1105 and K1107 triple motif peptides mimic a core structure on Lewis antigens, and components of bacterial LOS, that may be further manipulated in a vaccine design effort to target Lewis expressing tumors or pathogens that express these core structures.

Example 2

0098] The sequence similarities among the putative motifs suggest that antibodies raised to this peptide set might cross-react with similar subunits expressed on what are otherwise dissimilar carbohydrate structures. For example, polyclonal antibodies raised against the motif YYRYD might cross-react with MCP and with LeY. Molecular modeling suggests that the LeY tetrasaccharide structure is similar to the core structure of MCP, providing a structural basis for potential cross-reactivity . To further determine the extent of cross-reactivity for these motifs, peptides were synthesized repeating the respective . putative centralized motifs shown in Table 2. It is theorized that the repeating tract should adopt a helix configuration which emulates many extended carbohydrate structures. To evaluate the antigenic mimicry of motif forms, we synthesized respective multiple antigen peptides (MAP) forms for detection of a reactivity pattern with the anti-LeY monoclonal antibodies BR55-2, and 15.6 (also referred to as BR15.6) and the anti-ganglioside antibody ME361 (FIG. 2a). Significant reactive sequences in FIG. 2a correspond to 3 peptides,

1

GGIYYPYDIYYPYDIYYPYD (SEQ ID NO:1), (k61105),

GGIYWRYDIYWRYDIYWRYD (SEQ ID NO:2), (K1106) and

GGYYRYDIYYRYDIYYRYD (SEQ ID NO:3), (K61107).

immunogenic can provide an alternative immunogen for carbohydrate antigens that are difficult to isolate or synthesize. In addition, peptide mimotopes provide an alternative to identifying epitopes that are otherwise not defined chemically as those associated with some complex carbohydrate determinants.

Peptide libraries provide an almost infinite source of molecular shapes, amongst which one would expect to find mimics of any given antigen. Screening of random peptide libraries with monoclonal libraries has selected specific peptides. Such peptides will reflect the conformation of the antigen binding site and may provide molecular mimotopes of particular epitopes. Although peptide libraries have been used to identify mimotopes for a few saccharides, it was not certain that peptide mimotopes could be identified that would bind well enough to inhibit the binding of antibodies to carbohydrate antigens or induce immune responses that are protective in nature.

Peptide mimotopes for carbohydrates have been defined containing a two aromatic amino acid repeat motif W/YXY found to Con A (YPY), in peptides that mimic the Lewis Y antigen (WLY), in peptides that bind to antibodies to the meningococcal group C capsular polysaccharide (YRY), and in antibodies that bind to Crytococcous epitopes. These observations argue that a particular peptide structure is required for polysaccharide mimicry. Antibody heavy chain complementarity regions constitute a natural constrained loop peptide library that are rich in aromatic amino acids, especially tyrosine. Binding site specific anti-anti-idiotypic antibodies can serve as mimotopes for polysaccharide antigens. In this context , the binding site of an anti-idiotypic antibody could be looked upon as a way of presenting peptides so that they will mimic a particular conformation of a non-protein antigen. A more precise understanding of the binding of peptides and saccharides at the molecular level is required in order to determine whether the occurrence of motifs like W/YXY in mimotopes of saccharide structures is due to molecular mimicry or simply reflects an advantage provided by aromatic rings for interactions between proteins. In addition to the role that peptide mimotopes can play in exploring the fine specificity of antibodies, they may mimic polysaccharides as antigen and potentially elicit an anti-oligosaccharide response. Not all peptides that have been isolated from peptide libraries induce an anti-polysaccharide response. The problem now